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IS : 924 - 1965
(Reaffirmed 1998)

Indian Standard
SPECIFICATION FOR
BREAD KNIVES
(Revised)

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SPECIFICATION FOR BREAD KNIVES

(Revised)

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SPECIFICATION FOR BREAD KNIVES (Revised)

0. FOREWORD

0.1 This Indian Standard (Revised) was adopted by the Indian Standards Institution on 28 July 1965, after the draft finalized by the Cutlery Sectional Committee had been approved by the Consumer Products Division Council.

0.2 Formulation of Indian Standard specifications for cutlery items has been taken up at the instance of the Chief Inspectorate of General Stores (Ministry of Defence) and Office of the Development Commissioner, Small Scale Industries. In the preparation of this standard, considerable assistance has been derived from IND/GS/1325 'Defence Services specification for knives bread, table serrated edge' issued by the Ministry of Defence, Government of India.

0.3 This standard was first published in 1959. In this revision, the main modifications are that the use of plastics for the handle has been allowed, and tests for plastics handle and a sampling plan and criteria for conformity have been included.

0.4 This standard contains clauses which call for agreement between the purchaser and the supplier and which permit the purchaser to use his option for selection to suit his requirements. The relevant clauses are **2.2**, **3.1**, **8.1** and **10.1**.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements for bread knives.

* Rules for rounding off numerical values (*revised*).

2. MATERIALS

2.1 Blades — The blades shall be made of stainless steel conforming to designation 30Cr13 of Schedule V of IS : 1570-1961* with sulphur and phosphorus not exceeding 0.05 percent each.

2.2 Handle Scales — The handle scales shall be made of wood and conform to the requirements for Class V handles specified in IS : 620-1962† or of unbreakable and odourless plastics.

2.3 Rivets — The rivets shall be made of copper, brass or aluminium alloy (*see* designations NR5 and NR6 of IS : 740-1956‡).

3. SHAPE AND DIMENSIONS

3.1 The knives shall conform to the shape and dimensions shown in Fig. 1 (typical form of serrations is shown in Fig. 2). Knives with different shape and dimensions may be supplied by prior agreement between the manufacturer and the purchaser. The blades shall be hollow ground if desired by the purchaser.

4. MANUFACTURE

4.1 The blades shall be stamped from sheet or shall be suitably forged. The serrations shall be well-formed and shall have a regular pitch. Tangs shall be well drawn out. The handle scales shall fit closely to the tang throughout its length. The heads of the rivets, if used, shall be finished flush with the scales on both sides. The handle scales shall be flush with the tang throughout its length and their sharp edges shall be slightly rounded.

5. HARDNESS

5.1 The blades shall be well and evenly hardened and tempered to attain a hardness within a range of 450 to 550 HV (*see* IS : 1501-1959§) or from 45 to 52 HRC (*see* IS : 1586-1960 ||). The testing point shall be as near as practicable to the cutting edge.

6. WORKMANSHIP AND FINISH

6.1 Blades shall be free from cracks, seams, flaws, scales, pits, burrs and other defects. They shall taper uniformly towards the cutting edge. Blades shall be free from rough grinding marks and shall be finished bright all over. The handles shall be finished smooth and all their sharp edges and corners shall be rounded. The cutting edge shall be sharp and ready for use. The blade and handle shall be in alignment.

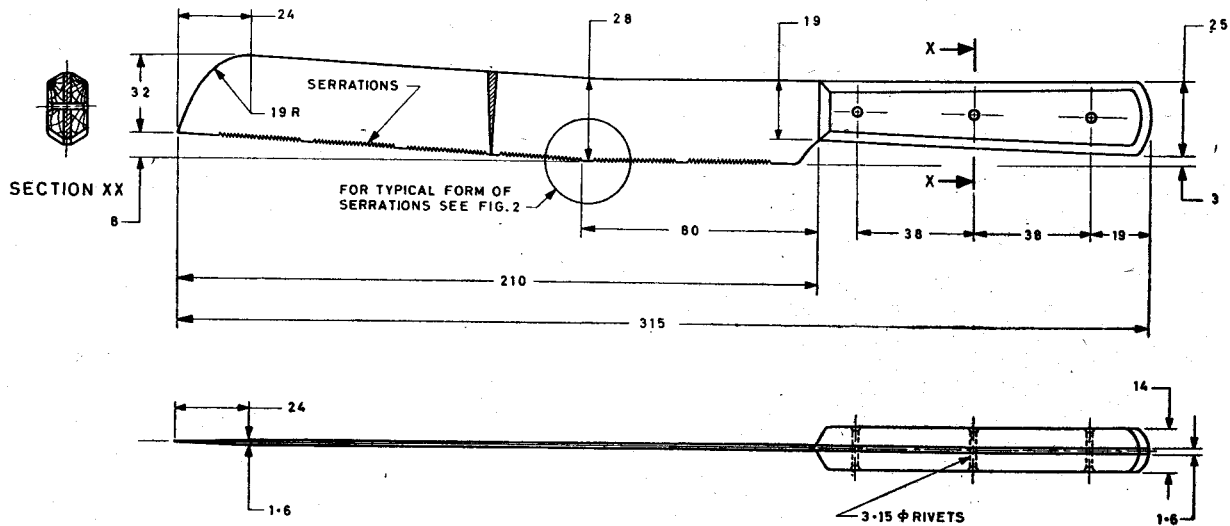
* Schedules for wrought steels for general engineering purposes.

† Specification for general requirements for wooden tool handles (*revised*).

‡ Specification for wrought aluminium and aluminium alloys, rivet stock (for general engineering purposes).

§ Method for Vickers hardness test for steel.

|| Method for Rockwell hardness test (B and C scales) for steel.



All dimensions in millimetres.

FIG. 1 BREAD KNIFE



FIG. 2 TYPICAL FORM OF SERRATIONS

7. DESIGNATION

7.1 The designation of bread knives shall indicate the name and the number of this standard.

Example:

A bread knife shall be designated as:

Bread Knife, IS : 924

8. SAMPLING

8.1 The number of knives to be selected from a lot for ascertaining conformity to this specification shall be as agreed to between the manufacturer and the purchaser. A suitable sampling scheme and criteria for conformity for knives are given in Appendix A.

9. TESTS

9.1 Practical Test for Soundness — The knife shall be made to strike 12 full blows by hand from a height of 250 mm on an aluminium block of not less than 99 percent purity (*see* IS : 617-1959*) or on a block of well-seasoned timber, such as:

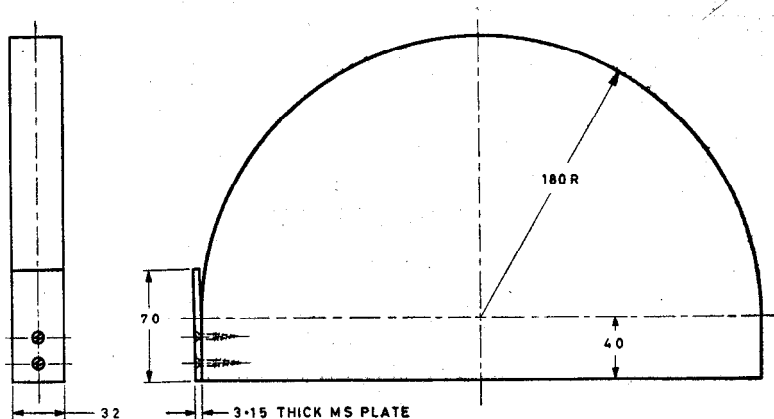
TRADE NAME	BOTANICAL NAME
sissoo	<i>Dalbergia sissoo</i> Roxb.
sal	<i>Shorea robusta</i> Gært. f.
rosewood (blackwood)	<i>Dalbergia latifolia</i> Roxb.
teak	<i>Tectona grandis</i> Linn. f.

The timber employed shall have a moisture content of not more than 12 percent. The blows shall be struck in such a manner that practically the entire length of the cutting edge hits the surface of the aluminium or wood block. The cutting edge shall not show any sign of distortion after the test and there shall not be any damage to any other part of the knife.

9.2 Flexibility — The blade shall be bent round the periphery of a wooden segment of 180 mm radius (*see* Fig. 3) until it is in contact with the segment throughout its length. It shall be kept in this position for one minute and then released. The blade shall not show any permanent set or damage after the completion of the test.

9.3 Staining Test — The knife, when dipped for 16 hours in each of the

* Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (*revised*).



All dimensions in millimetres.

FIG. 3 WOODEN SEGMENT FOR FLEXIBILITY TEST

following solutions, shall not show any sign of staining, after removal from the solution at the end of the above period:

- a) Ten grams of glacial acetic acid (99 percent) dissolved in distilled water to make 100 ml, and
- b) Five grams of pure sodium chloride dissolved in distilled water to make 100 ml.

9.4 Cutting — A fresh bread shall be cut into slices with the knife. The slices shall be neat, straight and good looking.

9.5 Tests for Plastics Handles

9.5.1 Boiling — The knife shall be immersed completely for one hour in a boiling 5 percent soap solution, then rinsed immediately in water at 15° to 20°C and immediately reimmersed completely in boiling water for one hour. The knife shall then be rinsed again in water at 15° to 20°C. This procedure shall be repeated four times. During or on completion of the test, the handle shall not give out any odour or show any sign of cracking, chipping or discolouring of the plastics. The tang shall neither become loose nor shall there be any other damage.

9.5.2 Impact — This test shall be conducted after the boiling test. The knife shall be held vertically with the handle downwards and dropped from a height of 1.2 m on to a concrete floor or a flat stone five times in succession. The handle shall not show any sign of cracking, breaking or chipping of the plastics and the tang shall neither become loose nor shall there be any other damage.

10. MARKING

10.1 Each knife shall be legibly and indelibly marked, preferably by engraving on the blade, the manufacturer's name, initials or registered trade-mark. The knives may also be marked with the year of manufacture, if required by the purchaser.

NOTE — For the purpose of cleanliness, it is necessary that knives should have no crevices or pits. For this reason, marking of knives should, preferably, not be done by stamping.

10.1.1 The knives may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

11. PRESERVATIVE TREATMENT AND PACKING

11.1 The handles, if made of wood, shall be given two coats of good quality varnish. Each knife shall then be wrapped in a suitable quality paper and packed in a carton in accordance with the best prevalent trade practice. Each carton shall bear the manufacturer's name or trade-mark, description of the contents, the number of knives it contains, and the ISI Certification Mark if a licence has been obtained for its use (*see Note under 10.1.1*).

APPENDIX A

(Clause 8.1)

SAMPLING SCHEME AND CRITERIA FOR CONFORMITY FOR BREAD KNIVES

A-1. SAMPLING

A-1.1 Lot — The knives of the same quality and dimensions manufactured from the same material under essentially similar conditions of manufacture shall constitute a lot.

A-1.2 To ascertain the conformity of the lot with the requirements of this standard, the number of knives to be selected at random from the lot shall be in accordance with col 1 and 2 of Table 1.

TABLE 1 SAMPLE SIZE AND CRITERIA FOR CONFORMITY*(Clause A-1.2)*

LOT SIZE (NUMBER OF KNIVES IN THE LOT) (1)	SAMPLE SIZE (NUMBER OF KNIVES TO BE SELECTED) (2)	ACCEPTANCE NUMBER (3)
Up to 50	8	0
51 „ 100	13	1
101 „ 150	20	1
151 „ 300	32	2
301 „ 500	50	3
501 and above	80	5

A-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-2.1 The knives as selected according to **A-1.2** shall be tested for (a) shape and dimensions (*see 3.1*), (b) hardness (*see 5.1*), (c) workmanship and finish (*see 6.1*), (d) soundness (*see 9.1*), (e) flexibility (*see 9.2*), (f) staining (*see 9.3*), (g) cutting (*see 9.4*), and (h) tests for plastics handles (*see 9.5*).

A-2.2 Criteria for Conformity — The lot shall be declared conforming to the requirements of this standard if the number of knives found defective for one or more characteristics mentioned in **A-2.1** is less than or equal to corresponding acceptance number given in col 3 of Table 1.

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